Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (previously presented): A method of producing silicon single crystals which comprises:

pulling up the silicon single crystal in the Czochralski method, with a cooling rate of not less than 7.3 °C/min in the single crystal temperature range of 1200-1050°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm^3 (ASTM '79 value), and the single crystal is not nitrogen doped.

2. (previously presented): A method of producing silicon single crystals which comprises:

pulling up the silicon single crystal in the Czochralski method, with a cooling rate of not less than 7.3°C/min in the single crystal temperature range of 1200-1050°C; and then

cooling the single crystal at a cooling rate of not more than 3.5°C/min in the single crystal temperature range of 1000-700°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm^3 (ASTM '79 value), and the single crystal is not nitrogen doped.

3. (canceled)

4. (previously presented): A method of manufacturing epitaxial wafers which comprises:

forming an epitaxial layer on the surface of a silicon wafer sliced from a silicon single crystal produced by the Czochralski method with a cooling rate of not less than 7.3°C/min in the single crystal temperature range of 1200-1050°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm^3 (ASTM '79 value), and the single crystal is not nitrogen doped.

5. (previously presented): A method of manufacturing epitaxial wafers which comprises:

forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal produced by the Czochralski method with a cooling rate of not less than 7.3°C/min in the single crystal temperature range of 1200-1050°C; and then

cooling the single crystal at a cooling rate of not more than 3.5°C/min in the single crystal temperature range of 1000-700°C,

wherein the single crystal has an oxygen concentration of not less than 12×10^{17} atoms/cm^3 (ASTM '79 value), and the single crystal is not nitrogen doped.

6-7. (canceled)

8. (previously presented): A method of producing silicon single crystals which comprises:

pulling up a silicon single crystal doped with 1 x 10^{12} atoms/cm^3 to 1 x 10^{14} atoms/cm^3 of nitrogen in the Czochralski method;

cooling the silicon single crystal with a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

9. (previously presented): A method of producing silicon single crystals which comprises:

pulling up a silicon single crystal doped with 1 x 10^{12} atoms/cm^3 to 1 x 10^{14} atoms/cm^3 of nitrogen in the Czochralski method, with a cooling rate of not less than 2.7°C/min in the single crystal temperature range of 1150-1020°C; and then

cooling the silicon single crystal at a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

10. (previously presented): A method of producing silicon single crystals which comprises:

pulling up a silicon single crystal doped with 5 x 10^{13} atoms/cm^3 to 1 x 10^{16} atoms/cm^3 of nitrogen in the Czochralski method, with a cooling rate of not less than 6.5°C/min in the single crystal temperature range of 1150-800°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

11. (previously presented): A method of producing silicon single crystals as claimed in any of Claims 8 to 10, wherein the single crystal has an oxygen concentration of not less than 4 x 10^{17} atoms/cm^3 (ASTM '79).

12. (canceled)

13. (previously presented): A method of manufacturing epitaxial wafers which comprises:

forming an epitaxial layer to grow on the surface of a silicon wafer sliced from a silicon single crystal doped with 1 x 10^{12} atoms/cm^3 to 1 x 10^{14} atoms/cm^3 of nitrogen as produced by the Czochralski method; and then

cooling the epitaxial layer with a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

14. (previously presented): A method of manufacturing epitaxial wafers which comprises:

forming an epitaxial layer on the surface of a silicon wafer sliced from a silicon single crystal doped with 1 x 10^{12} atoms/cm^3 to 1 x 10^{14} atoms/cm^3 of nitrogen as produced by the

Czochralski method by with a cooling rate of not less than 2.7°C/min in the single crystal temperature range of 1150-1020°C; and then

cooling the epitaxial layer at a cooling rate of not more than 1.2°C/min in the single crystal temperature range of 1000-850°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

15. (currently amended): A method of manufacturing epitaxial wafers which comprises:

forming an epitaxial layer on the surface of a silicon wafer sliced from a silicon single crystal doped with 5 x 10^{13} atoms/cm^3 to 1 x 10^{16} atoms/cm^3 of nitrogen as produced by the Czochralski method with a cooling rate of not less than 6.5°C/min in the crystal temperature range of 1150-800°C,

wherein the single crystal has an oxygen concentration of not less than 12 x 10^{17} atoms/cm^3 (ASTM '79 value).

16. (previously presented): A method of manufacturing epitaxial wafers as claimed in any of Claims 13 to 15, wherein the silicon wafer sliced out has an oxygen concentration of not less than 4 x 10^{17} atoms/cm^3 (ASTM '79).